Simpson

INSTRUMENTS THAT STAY ACCURATE

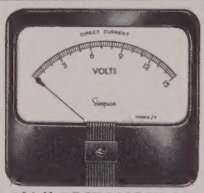
OPERATOR'S MANUAL

RECORDER MODEL 603

SIMPSON ELECTRIC COMPANY

5200 W. Kinzie St., Chicago, Illinois 60644
Area Code 312, Telephone 379-1121
In Canada, Bach-Simpson, Ltd., London, Ontario

Simpson panel instruments..



4½" RECTANGULAR

1375 STOCK TYPES

...plus HUNDREDS MORE, custom-built from standing tools ✻

INSTRUMENTS THAT STAY ACCURATE

✻ **Send us your special meter requirements today. Let our top-flight engineers work out solutions or make recommendations *best suited* to your needs.**

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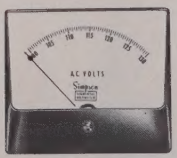
2½ RECTANGULAR
ACCURACY: ±2%

6" RECTANGULAR
ACCURACY: ±2%



1½", 2½", 3½", 4½" WIDE VUE
ACCURACY: ±2%

2½" or 3½" ROUND
ACCURACY: ±2%

EDGEWISE
ACCURACY: DC ±2%
SCALE LENGTH: 1⅞"

ELAPSED TIME INDICATOR
110/220 VOLTS

See the Simpson ADD-A-TESTER ADAPTERS they will increase the versatility of your 260 or 270 VOM'S.

TRANSISTOR TESTER	
Model 650	**$38.00**
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Model 652	**$43.00**
AC AMMETER	
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BATTERY TESTER	
Model 656	**$26.00**
MILLIOHMMETER	
Model 657	**$48.00**
DC AMMETER	
Model 661	**$28.00**

ADDENDUM SHEET
MODEL 603

Page 6

Change: Low speed unit, chart impression rate: from 2½/Min. (24 sec.) to 10/Min. (6 sec.)

Add:

Intermediate speed unit:

Chart speed: 1½, 6, 12, 18 inch/hr.

Chart impression rate: 30/Min. (2 sec.)

Page 11 Accessories

Add:

	Cat. No.
Chart Paper (Available in qtys. of 6 rolls/box)	
50 Divisions A.C. Amp.	20095
60 Divisions Segmental Voltmeter	20096

OPERATOR'S MANUAL

RECORDER MODEL 603

SIMPSON ELECTRIC COMPANY

5200 W. Kinzie St., Chicago, Illinois 60644
Area Code 312, Telephone 379-1121
In Canada, Bach-Simpson, Ltd., London, Ontario

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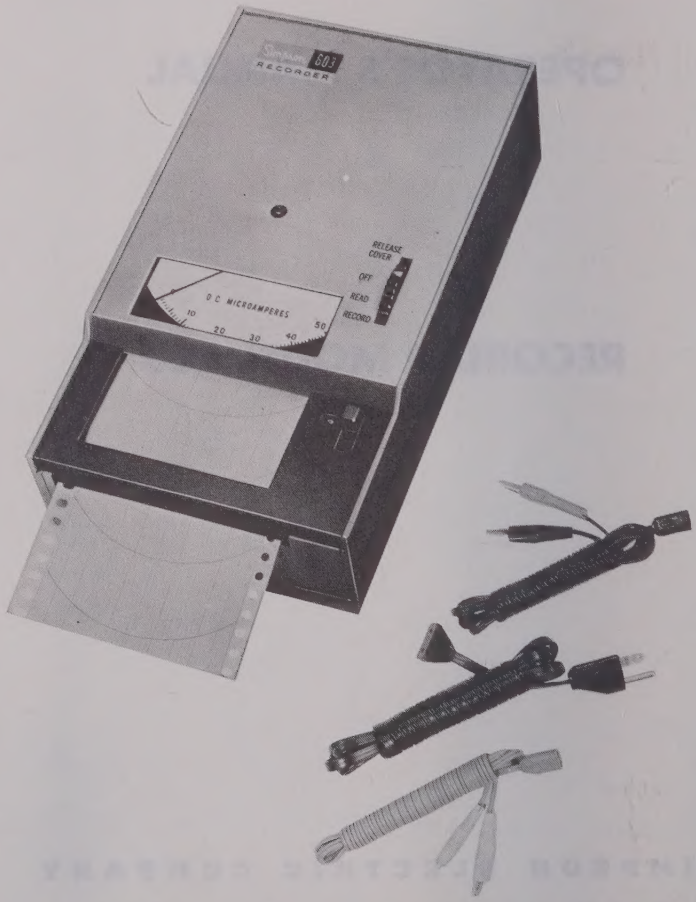

FIG. 1 MODEL 603 RECORDER

TABLE OF CONTENTS

Page No.

General Description 4

Measuring System Specifications 5

Operation

Inserting Chart Paper 9

Chart Speed Selection 9

Cycle Indicator 10

General Technical Information 10

Maintenance 11

Accessories 11

ILLUSTRATIONS

Figure 1 Model 603 Recorder 2

Figure 2 Chart Paper 7

Figure 3 Chart Drive 8

Figure 4 Recorder Closed 12

Figure 5 Recorder Open 13

Figure 6 Panel Cut-out 14

Figure 7 Rack Mounting 15

Figure 8 Dimensional Diagram 16

Figure 9 Schematic Diagram 17

GENERAL DESCRIPTION

The new Simpson Model 603 miniature graphic recorder is accurate, compact, extremely easy to operate and load with chart paper. It incorporates a cycle indicator device, combining the advantages of an event recorder with those of a graphic recorder.

Inkless recording is accomplished by sequential impressions of the stylii on pressure sensitive chart paper, eliminating the problem of pen and ink maintenance. The Model 603 may be used as an indicating instrument, without recording, by placing the function control in the "READ" position.

The Model 603 features a shockproof annular movement with a taut band suspension moving coil system. The movement is self-shielded, eliminating errors caused by normally encountered currents and magnetic materials.

The Model 603 Recorder features a chart speed selector, enabling the operator to select one of four chart speeds by merely moving the selector. This chart speed selection can be made while the recorder is in operation, thus eliminating a time consuming shutdown and disassembly of the recorder.

The Model 603 Recorder is supplied with three separate plug-in type cords. The grounded power cord is black. The cycle indicator cord is grey, with insulated alligator clips. The test cord is red and black for easy polarity identification and is equipped with insulated alligator clips.

The Model 603 Recorder is rugged in design and uses the most modern components and techniques. Assembly is done by well trained personnel using quality materials and modern equipment. This combination of design, materials and skillful assembly results in a quality instrument. If it is properly used and not subjected to abuse, the Model 603 will provide many years of trouble-free service.

MEASURING SYSTEM SPECIFICATIONS

The moving coil system with a taut band suspension movement has a response time of less than 1.5 seconds. AC measurements up to 20,000 Hertz are made by means of a full wave rectifier.

Accuracy of indication:	Percent of full scale
DC	1.5
AC	3.0
Accuracy of recording: DC	2.5
AC	4.0
Temperature Influence: (From 15 to 35° C)	
DC for 10° C change (18° F)	1.0
AC for 10° C change (18° F)	3.0
Frequency Influence: 50 - 20,000 Hertz	2.0

Influence of Waveform:
Instrument calibrated in effective values of a sinusoidal wave. Form factor of 1.11 for sinusoidal AC taken into account. (Deviations from a sine wave may cause an error)

Dielectric Test Voltage:
The instrument is designed to withstand 1500V AC between measuring circuit and ground.

Recording System Specifications:
Chart paper and clamping bar action is driven by a self contained synchronous motor.

Motor Drive:
Self starting synchronous motor, 120 volts, 60 Hertz contained in recorder.

MEASURING SYSTEM SPECIFICATIONS

Cycle Indicator:
120 volts, 60 Hertz continuous duty.

Chart Speeds:
Low speed unit
Chart speed: 1/4, 1, 2, 3, inch/hr.
Chart impressions rate: 2½/Min. (24 sec.)

High Speed Unit:
Chart speed: 3, 12, 24, 36 inch/hr.
Chart impressions rate: 30/Min. (2 sec.)

CHART PAPER
Type - Pressure sensitive.
Width of recording scale: 2.5 inches
Scale type: Curvilinear.
Width of chart: 3 inches
Length of paper on roll: 63 feet, approximately.
Range imprint: Every 12 inches
Time imprint: Every inch, numbered 1 through 12.
Amount of chart paper remaining in recorder indicated on left side numbered 61 through 0.

Divisions	Cat. Number
50	20097
60	20098
75	20099

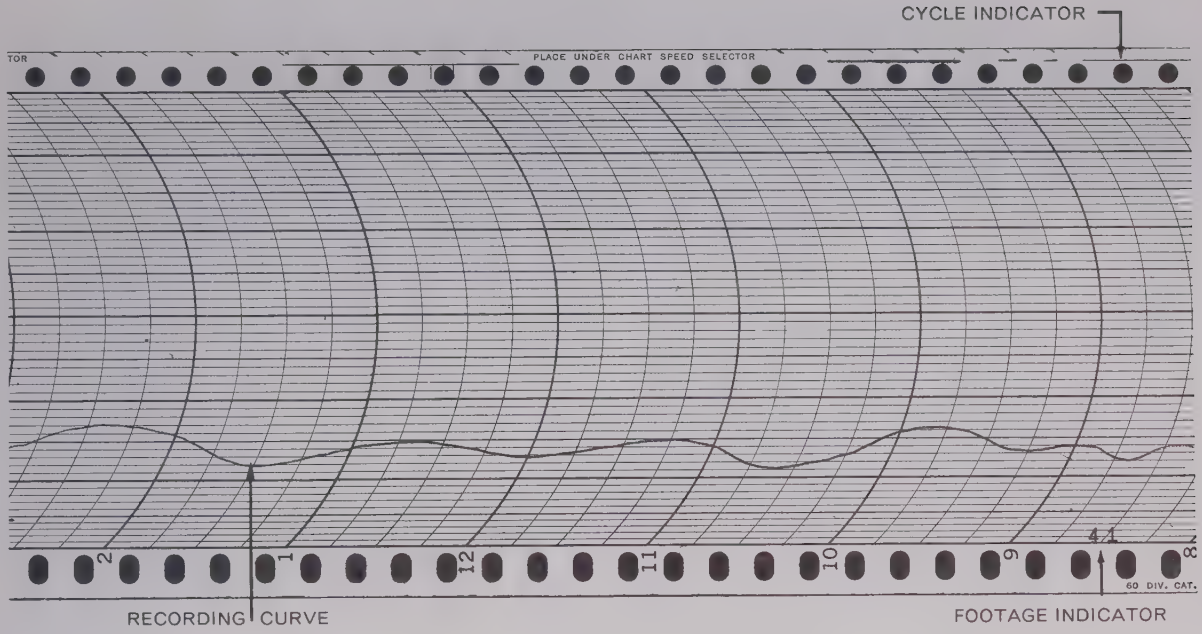

FIG. 2 CHART PAPER

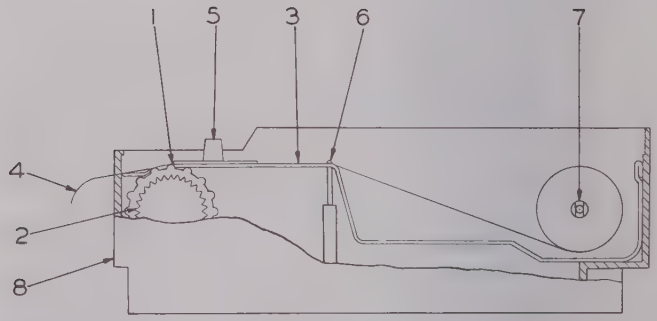

FIG. 3 CHART DRIVE

1. Sprocket, Chart Drive
2. Take-up reel drive
3. Chart marking platen
4. Chart paper
5. Chart speed selector
6. Cycle indicator stylus
7. Chart roller
8. Case

OPERATION

INSERTION OF CHART PAPER:

Insertion of chart paper (See Figs. 3, 4 & 5, pages 8, 12, & 13 for identification of parts).

Turn function control on top panel to "RELEASE COVER" position, lift hinged cover until it locks in the raised position. Lift out chart roller, remove used core and install new chart roll. (Note: Roll must be centered on chart roller, approximately 3/32 inch extending on each end). When re-inserting chart into recorder, oblong perforations must be on the left. Pull off about 8 inches of paper from chart roll, place right edge of the chart under the chart speed selector and place the chart so that the pins of the drive sprockets engage the perforations of the paper. To close cover, push cover support rod toward back until lock is released. Gently close cover, being careful that the chart paper does not come off of the drive sprocket pins. Turn function control to "OFF" position to lock cover closed.

ADJUSTMENT OF TIME SCALE ON CHART:

Instrument Opened: Pull chart paper in the direction of chart motion until desired time line coincides with cycle indicator stylus. (See Figs. 3 & 5).

Instrument Closed: Carefully pull out extending end of chart until a number coincides with the mark, △ on the recorder cover. This setting is two inches ahead of the actual time mark. Example: to set the time scale on chart at 3, pull out the chart until the number 1 on chart coincides with the mark △ on recorder cover.

SELECTION OF CHART SPEED:

A selection of one of four chart speeds is made by moving the speed selector, located on the front panel of the recorder, until the desired chart speed is indicated. The selection of chart speed may be made with the recorder running or off. Should a hesitation of the motor drive occur, accompanied by a noisy operation, moving the speed selector to a lower speed for a few seconds before resetting to the desired speed will restore quiet operation.

OPERATION

CYCLE INDICATOR:

To use cycle indicator for simultaneous or separate event recording, connect cycle indicator leads (grey) in parallel with unit to be checked. Recording will be on the right edge of the chart only when the unit being checked is operating. No mark on the chart indicates the unit being checked is off. (See Fig. 2, Page 7). Note: The cycle indicator is 120 volts, 60 Hertz operated.

GENERAL TECHNICAL INFORMATION

NOTE:

To achieve maximum accuracy, the instrument should be used in a horizontal position.

Adjust Indicating Pointer for Zero:
With the function control in the "OFF" position, slowly turn the zero adjuster, located approximately one inch above the window, clockwise or counter-clockwise until the pointer is exactly over the zero mark.

POWER AND TEST LEADS:

Plug into recorder Power cord (Black), Test cord (Red & Black), and Cycle Indicator cord (Grey). Note: To prevent damage to the recorder, cords are not interchangeable and should not be forced into place. Proper connection of cords is indicated on bottom of case. Connect test leads and turn function control to "READ" position. In the "READ" position, the clamping bar is released and the recorder may be used as an indicating instrument. To begin recording, plug power cord into 120 volt AC power source, turn function control to "RECORD" position.

RACK MOUNTING:

The Model 603 Recorder is suitable for rack mounting into panels up to 3/16 inch thick. The necessary hardware is supplied with each recorder. To rack mount, cut a hole in the panel 6-15/16" long and 3-7/8" wide, (see Fig. 4). Screw the short ends of the studs into the bottom of the recorder. Insert the recorder into the panel opening, up to the step. From the back of the panel, insert the bracket over the studs, install flat washers and nuts, and tighten. (See Fig. 7, page 15).

MAINTENANCE

The Model 603 Recorder is permanently lubricated and requires very little maintenance.

Dust and deposits from the chart paper on the stylus tip, platen and dial should be removed by lightly brushing with a soft bristle brush. (See Fig. 5)

ACCESSORIES

Chart Paper	(Available in qtys. of 6 rolls/box)	Cat. No.
50 Divisions	"	20097
60 Divisions	"	20098
75 Divisions	"	20099
Take-Up Reel Assembly	"	20195
Vinyl Carrying Case		20196
Cycle Indicator Cord	Grey	20197
Power Cord	Black	20198
Test Cord	Black & Red	20199
Cores, Take Up Reel	(Qtys. of 6)	20194

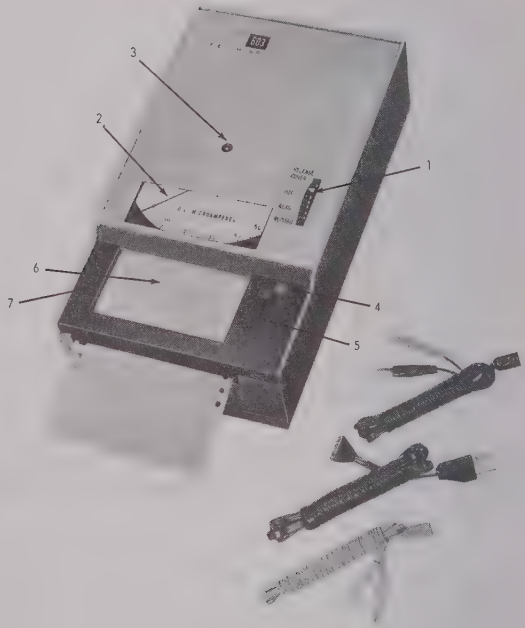

FIG. 4 RECORDER CLOSED

1. Function Control
2. Pointer
3. Zero adjuster
4. Chart speed selector
5. Chart speed indicator (In/Hr.)
6. Writing desk (for making notes on chart)
7. Time scale setting mark

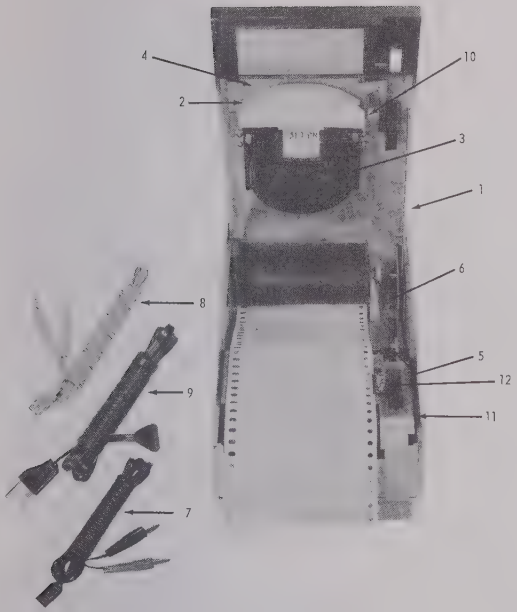

FIG. 5 RECORDER OPEN

1. Cover support rod
2. Stylus
3. Taut band movement
4. Clamp
5. Cycle indicator stylus
6. Chart roller
7. Test cord
8. Cycle indicator cord
9. Power cord
10. Dial
11. Marking Platen
12. Chart speed selector

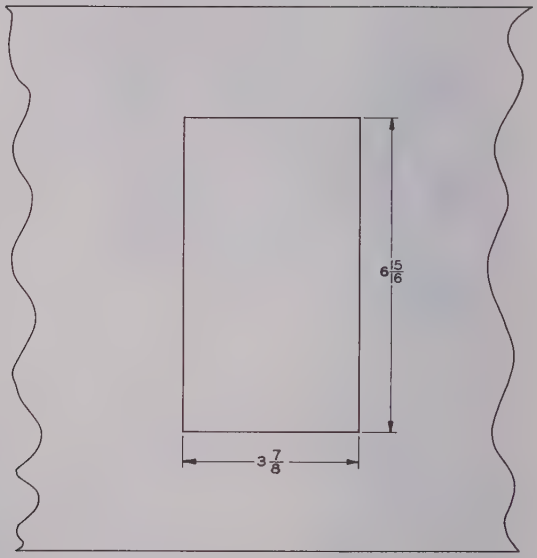

FIG. 6 PANEL CUT-OUT

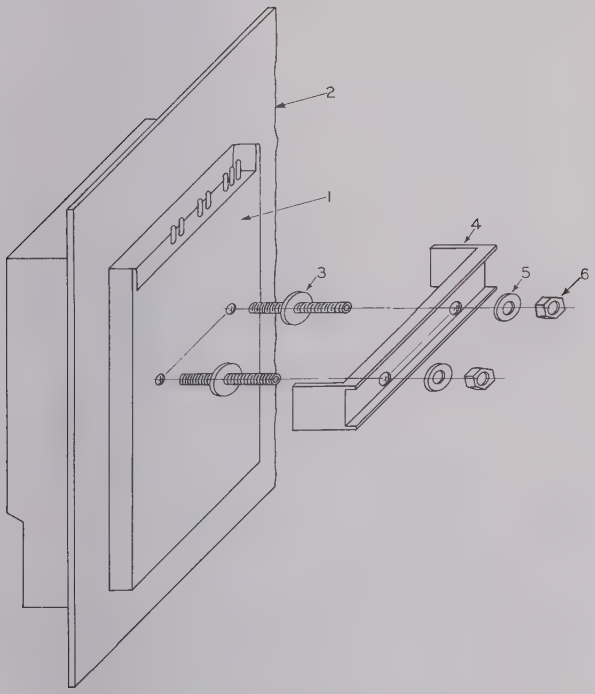

FIG. 7 RACK MOUNTING

1. Recorder
2. Panel with hole cut
3. Studs
4. Bracket
5. Washers
6. Hex nuts

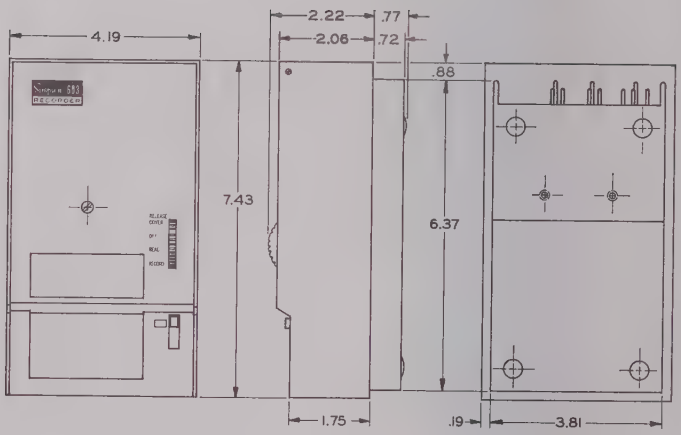

FIG. 8 DIMENSIONAL DIAGRAM; WEIGHT 2.6 LBS.

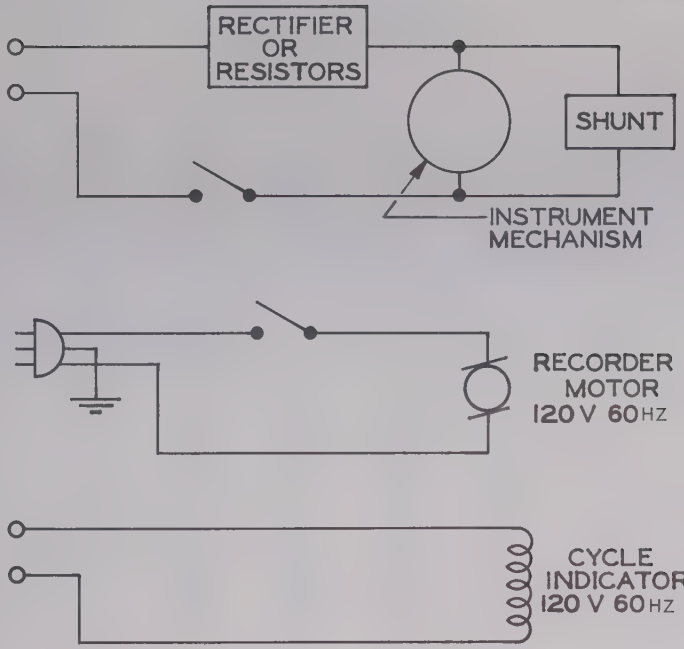

FIG. 9 SCHEMATIC DIAGRAM

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Florida, Orlando 32806 Electro Tech Inc. 307 - 27th Street	Area Code 305 423-5589
Georgia, Hapeville 30054 Electro-Tech, Inc. 3020 Commerce Way	Area Code 404 758-7205
Hawaii, Honolulu 96817 Electronic Systems Inc. 1622-26 Silva Street	851-457 811-132
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Massachusetts, Cambridge 02138 A. S. Mancib 363 Walden Street	Area Code 617 864-2494
Massachusetts, Needham Heights 02194 Instruments, Incorporated 570 Hillside Avenue	Area Code 617 444-9410

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New York, Great Neck, L.I. 11022 A & M Instrument, Inc. Community Drive	Area Code 516 487-0500
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North Carolina, Charlotte 28206 Electro-Tech Inc. 3107 Gullman Avenue	Area Code 704 333-0326

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Texas, Dallas 75204 Ultra Instrument Lab., Inc. 3515 Swiss Avenue, Suite 117	Area Code 214 826-6395 826-6396
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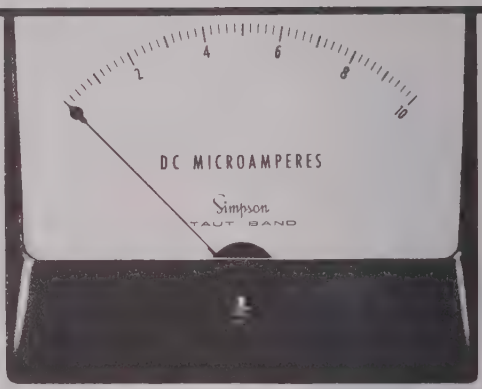
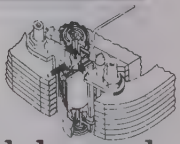




here's the taut band reliability you should demand

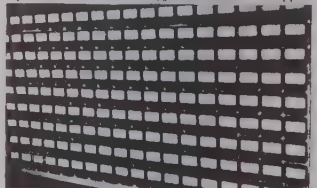
Simpson's search for reliability began at a major source of trouble—the overly complicated design of conventional Taut Band suspensions. The result was an improved suspension with 25% fewer parts.

Because of this, you would expect life expectancy to zoom, and trouble to nose dive. And that's just what happened.

The Ultimate in Test Programs—As just one step in a comprehensive test program to insure reliability measuring up to today's needs, Simpson engineers put 150 of the improved Taut Band meters on a continuing 24-hour test (cycled zero to full scale 2200 times per hour). As of August 30, 1964, the 150 meters have logged 25,243,000 cycles without failure. This is equivalent to over 70 years of normal operation. Weekly calibration checks show that the meters are holding ± ½% accuracy. Simpson Taut Band meters also passed ASA tests for extreme temperature, humidity, shock, and vibration.

Stocked for Immediate Delivery—Present units stocked are microammeters in 2½", 3½", and 4½" sizes. Ranges are 10, 15, 25, 50, 100 ua; accuracy, ± 2% F.S. *For fast service, call your distributor.*

Special Requirements—Contact your Simpson representative or the factory. Sensitivities as low as 2 microamperes at accuracies of 1% or better can be supplied.



Continuing reliability tests being run on 150 improved Taut Band meters with 20 pivot-jewel meters used as control units.

WRITE FOR Bulletin PM-505.

Simpson

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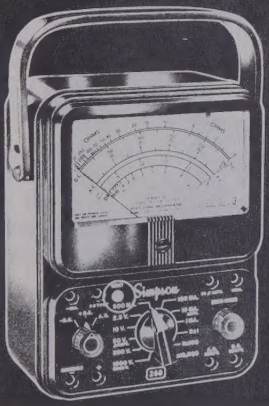
INSTRUMENTS THAT STAY ACCURATE

GOOF-PROOF VOM



Here's the most foolproof volt-ohm-milliammeter ever made. Protection approaches 100%. It's the VOM you will want to have on hand where inexperienced people are running tests . . . or will reach for yourself on those days when you're all thumbs. The 260-5P will save you all kinds of headaches from burned out meters and resistors, bent pointers, and inaccuracies caused by overheating.

SIMPSON 260-5P

ONLY $88.00

Combined Protection You Won't Find In Any Other VOM

1. Reset button pops out to indicate overload.
2. You cannot reset circuits while overload is present.
3. Protective circuit does *not require* massive overloads which can cause hidden damage to the instrument.
4. All ranges are protected except those not feasible in a portable instrument—1000 and 5000 volts DC and AC; 10 amp DC.

Ranges—The 260-5P has the same ranges and takes the same accessories as Simpson's famous 260-4 VOM.

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If you run tests on communication systems, motors, wiring, appliances, tubes, components, batteries, or coolers, these nifty little testers are just what you're looking for. Micro-Testers measure only 3" x 5⅜" x 2½". They give you Simpson quality in a tester that is compact in both size and price. *All 18 are in stock for immediate delivery. Call your Electronics Distributor or the factory for Bulletin 2066.*

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OHMMETER: 6 ranges, 0 ohms to 50 meg.	Model 372	35.00
LOW-OHMMETER: 0-5, 0-25 ohms	Model 362	35.00
AC AMMETER: 0-1, 2.5, 5, 10, 25 amp. ±5% FS	Model 370	35.00
DC AMMETER: 0-1, 2.5, 5, 10, 25 amp. ± 3% FS	Model 375	35.00
AC MILLIAMMETER: 0-5, 25, 100, 250, 1000 ma, ± 5% FS	Model 378	35.00
DC MILLIAMMETER: 0-1, 5, 10, 25, 50, 100, 250, 1000 ma, ± 3% FS	Model 373	35.00
DC MICROAMMETER: 0-50, 100, 250, 500, 1000, ua ± 3% FS	Model 374	35.00
AC VOLTMETER: 0-5, 10, 25, 50, 100, 250, 500, 1000 v, ± 5% FS	Model 376	35.00
AC VOLTMETER: 0-150, 300, 600 v, ± 3% FS	Model 371	35.00
DC VOLTMETER: 10 ranges, 0 to 1000 v, ± 3% FS	Model 377	35.00
DC MILLIVOLTMETER: 0-10, 30, 100, 300, 1000 mv, ± 3% FS	Model 387	35.00
AC VOLT-AMP-WATTMETER: 8 ranges (300 v, 15 a, 3000 w. max) ± 5% FS	Model 390	60.00
AC/DC VOLT-WATTMETER: 4 ranges (260 v, 3000 w, max) ± 5% FS	Model 391	55.00
AC/DC VOLT-WATTMETER: 4 ranges (260 v, 5000 w, max) ± 5% FS	Model 392	60.00
BATTERY TESTER: for radios, flashlights, hearing aids	Model 379	35.00
TEMPERATURE METER: −50° to +70°F (up to 3 temp. one time)	Model 385-3L	40.00

Simpson
INSTRUMENTS THAT STAY ACCURATE

SIMPSON ELECTRIC COMPANY
5206 W. Kinzie Street, Chicago, Ill. 60644
Phone: (312) EStebrook 9-1121
In Canada:
Bach-Simpson Ltd., London, Ontario

WARRANTY

SIMPSON ELECTRIC COMPANY warrants each instrument and other articles of equipment manufactured by it to be free from defects in material and workmanship under normal use and service, its obligation under this warranty being limited to making good at its factory any instrument or other article of equipment which shall within 90 days after delivery of such instrument or other article of equipment to the original purchaser be returned intact to it, or to one of its authorized service stations, with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been thus defective; this warranty being expressly in lieu of all other warranties expressed or implied and of all other obligations or liabilities on its part, and SIMPSON ELECTRIC COMPANY neither assumes nor authorizes any other persons to assume for it any other liability in connection with the sale of its products.

This warranty shall not apply to any instrument or other article of equipment which shall have been repaired or altered outside the SIMPSON ELECTRIC COMPANY factory or authorized service stations, nor which has been subject to misuse, negligence or accident, incorrect wiring by others, or installation or use not in accord with instructions furnished by the manufacturer.

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Quality is the indispensable component of every Simpson instrument . . . . . .